REMARKS

1. Summary of the Office Action

In the Final Office Action mailed August 25, 2006, under 35 U.S.C. § 103(a), Examiner rejected claims 1, 7, 9, 12, 16, 17, 23, and 30 as being obvious over a combination of U.S. Patent No. 7,003,261 (Dietz) and U.S. Patent No. 6,782,277 (Chen), claims 18 and 19 as being obvious over a combination of Dietz, Chen, and U.S. Patent Application Publication No. 2004/0146013 (Song), and claims 10 and 20 as being obvious over a combination of Dietz, Chen, and U.S. Patent No. 5,907,794 (Lehmusto). Further, and similarly under 35 U.S.C. § 103(a), the Examiner rejected claims 11, 14, 15, and 24 as being obvious over a combination of Dietz, Chen, and U.S. Patent Application Publication No. 2003/0162550 (Kuwahara), claims 26 and 31 as being obvious over a combination of Dietz, Chen, and U.S. Patent No. 5,534,872 (Kita), and claims 21 and 22 as being obvious over a combination of Dietz, Chen, Lehmusto, and Kuwahara. Also under 35 U.S.C. § 103(a), the Examiner rejected claim 27 as being obvious over a combination of Dietz, Chen, Kita, and U.S. Patent No. 6,799,024 (Wang), and claims 28 and 29 as being obvious over a combination of Dietz, Chen, Kita, Wang, and U.S. Patent No. 6,567,460 (Tak).

2. Status of the Claims

Claims 1, 7, 9-12, 14-24, and 26-31 are pending in this application. Of these, claims 1, 7, 16, and 23 are independent, and the rest are dependent.

Each of claims 1, 7, 9-12, 14-24, and 26-31 includes, at least, the functions of dynamically directing a wireless repeater to receive wireless signals from a plurality of base stations. Specifically, claims 1, 7, 9-12, 14, 15, 23, 24, and 26-31 includes the function of causing an antenna of a wireless repeater to sweep over a coverage area through increments, and

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to thereby receive wireless signals from a plurality of base stations. Each of claims 16-22 includes a similar function of "incrementally adjusting the wireless repeater to receive wireless signals within the number of coverage areas, and to thereby receive wireless signals from a plurality of base stations."

3. Response to Rejections

a. Dietz Reference

Dietz discloses a method of installing repeater units into cars, so as to increase the likelihood that a wireless transmission path will be established between a remotely located mobile station and a servicing base station. According to Dietz, when a communication path cannot be established between a mobile station and a base station directly, a communication path is established via a sequential set of repeaters installed in cars, which are traveling randomly in a remote region. Once this communication path is established, Dietz also discloses that if an alternate path of a sequential set of repeaters is available, and if that alternate path has more preferable transmission attributes, then that communication path is selected.

b. Chen Reference

Chen discloses a method of wireless communications wherein a base station transmits a signal to a subscriber station through a signal beam that sweeps through the coverage area of the base station. (Chen Abstract).

According to Chen, forward-link and reverse-link communications between a beam sweeping base station and its serviced subscriber station are coordinated. "As a base station's signal beam sweeps through the base station's coverage area, the signal beam passes through a portion of the coverage area containing different active subscriber stations. The transmission of user data from the base station is delayed such that the data is transmitted while its destination or

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source subscriber station is *within the base station's signal beam*" (emphasis added). Chen, col. 4, lines 34-42. As a signal beam "continually sweeps, [the] base station predicts when the signal beam angle will be optimal for efficiently transmitting forward-link supplemental channel traffic to each subscriber station." According to this prediction, the "base station buffers user data addressed to a [given] subscriber station until [the] signal beam reaches the signal beam angle that is optimal for transmitting to that subscriber station." Chen, col. 6, lines 28-41.

Conversely, on the reverse-link, "the subscriber station regulates its reverse-link data rate such that the user data is transmitted during periods when serving base stations can most efficiently receive the subscriber stations reverse-link signal." Chen, col. 16, lines 61-67. According to Chen, "[t]hese periods generally correspond to the periods when [the] beam sweeping base station is receiving along a signal beam *pointed toward* [the] subscriber station (emphasis added). Chen, col. 18, lines 9-15.

c. Response to § 103 Rejection of Independent Claims 1, 7, 16, and 23

As noted, in the Final Office Action dated August 25, 2005, Examiner rejected claims 1, 7, 9, 12, 16, 17, 23, and 30 under 35 U.S.C. § 103(a) as being obvious over a combination of Dietz and Chen. Of these, claims 1, 7, 16, and 23 are independent.

In attempting to establish a *prima facie* case of obviousness, Examiner argued that combining Dietz and Chen would suffice. Specifically, Examiner argued that, although Chen only discloses a beam sweeping base station antenna, Chen taught the "*functionality* of an antenna of a wireless repeater sweeping over a coverage area through increments," and that the motivation for combining Dietz and Chen "can be found in the summary of the Chen reference, as reducing interference to subscriber stations and thus improving the transmit of the subscriber

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stations in the system" (emphasis added). *See*, Final Office Action dated August, 25, 2006, pg. 20-21. Applicant respectfully disagrees.

Under M.P.E.P. § 2143, to support a rejection under 35 U.S.C. § 103(a), to establish the requisite *prima facie* case of obviousness over a combination of references, there must be some suggestion or motivation to modify the references or combine the reference teachings. *See* M.P.E.P § 2142. However, there is no suggestion or motivation to modify or combine the references where the modification would render the cited art unsatisfactory for its intended purpose. *See* M.P.E.P. 2143.01, section V ("if [the] proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification."). Applicant respectfully traverses the obviousness rejection of claims 1, 7, 16, and 23, because combining of Dietz and Chen in the manner suggested by Examiner would render Dietz unsatisfactory for its intended purpose. Specifically, adding the functionality of Chen to Dietz, as Examiner suggested, would actually *decrease* the likelihood that a communication path will be established between a mobile station and base station via a sequential set of routers installed into cars.

As noted above, the purpose of Dietz is to *increase* the likelihood that a connection will be established between a mobile station and base station via a set of sequential repeaters installed in cars traveling randomly in a remote region. If, from Chen, the "functionality of an antenna of a wireless repeater sweeping over a coverage area through increments" is added to Dietz, then Chen's enablement of such a function must be considered as well.

According to Chen, only a base station, and not the mobile station, is implemented with a beam sweeping antenna. For communication to take place, both the base station and the mobile station *delay* transmission of their signal until the signal beam of the beam sweeping base station

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is at an "optimal angle." Chen, col. 6, lines 28-41 (The "base station buffers user data addressed to a [given] subscriber station until [the] signal beam reaches the signal beam angle that is optimal for transmitting to that subscriber station."). According to Chen, this optimal angle generally corresponds to when the signal beam is *pointed toward* the mobile station. Chen, col. 18, lines 9-15 ("These periods generally correspond to the periods when [the] beam sweeping base station is receiving along a signal beam *pointed toward* [the] subscriber station" (emphasis added)).

If the "functionality of an antenna of a wireless repeater sweeping over a coverage area through increments" is added to Dietz from Chen, then the enabling aspect of delaying transmission until the signal beam is at an optimal angle, i.e., pointed toward its target, would also be added to Dietz. However, adding the aspect of delayed transmission would actually *decrease* the likelihood that a communication path will be established between a mobile station and base station via a sequential set of routers installed into cars.

To illustrate, in Dietz, taking the scenario where first and second repeater units within a communication path are both equipped with the beam sweeping antennas of Chen, communication would occur *only* when both of their respective signal beams are at optimal angles relative to each other, i.e., pointed toward each other *at the same time*. For instance, the first repeater unit would delay transmission of its signal until not only its signal beam is pointed toward the second repeater unit, but also until the signal beam of the second repeater unit is also pointed toward the first repeater unit *at the same time*. In this scenario, it is likely that the rotating antennas of both the first and second repeater units would never point toward each other at the same to allow for transmission, or would occur so infrequently that effectively no communication would occur. As such, modifying Dietz in the manner suggested by the

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Examiner would in fact *decrease* the likelihood that a wireless transmission path is established between a mobile station and a base station via a sequential set of repeaters installed within cars.

As such, combining Dietz and Chen in the manner suggested by the Examiner would render Dietz unsatisfactory for its intended purpose. Therefore, there is no suggestion or motivation to combine Dietz and Chen in the manner set forth by Examiner. Given that there is no suggestion or motivation to combine Dietz and Chen, a *prima facie* case of obviousness of these claims over Dietz and Chen has not been established. Therefore, Applicant submits that claims 1, 7, and 23 are allowable.

d. Response to § 103 Rejection of Dependent Claims 9-12, 14, 15, 17-22, 24, and 26-31

Without addressing the Examiner's statements regarding the pending dependent claims 9-12, 14, 15, 17-22, 24, and 26-31, which are not conceded, Applicant points out that these claims all depend from and incorporate the limitations of one or more of independent claims 1, 7, 16, and 23, which, as discussed above, are allowable over the cited art. Accordingly, 9-12, 14, 15, 17-22, 24, and 26-31 are allowable for at least the reason that they each depend from an allowable claim. Applicant respectfully requests that the Examiner withdraw the rejections of the pending dependent claims.

4. Conclusion

For the foregoing reasons, Applicant submits that all of the pending claims are now in condition for allowance. Therefore, Applicant respectfully requests favorable reconsideration and allowance.

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Should the Examiner wish to discuss any aspect of this case, the Examiner is invited to call the undersigned at (312) 913-2141.

Respectfully submitted,

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